Course Name   : **Diploma in Mechanical Engineering**
Course Code   : **DME**
Semester   : **First**
Subject Title   : **Mathematics - I**
Subject Code   : **134MA11a**
Teaching & Examination Scheme

Teaching Scheme			Paper Hours	Examination Scheme											Total Marks
				Theory		Test	Total		PR		OR		TW		
L	T	P		Max	Min		Max	Min	Max	Min	Max	Min	Max	Min	
3	2	-	3	80	32	20	100	40	-	-	-	-	25	10	125

Rationale: -
Mathematics is the foundation stone for studies in all branches of Engineering. This subject helps students to develop logical thinking which in turn is useful in understanding the principles of all other subjects. Analytical and systematic approach towards any problem is developed by learning mathematics.

Objective: -
1. To teach students basic facts, concepts and principles of mathematics as a tool to analyze engineering problems.
2. To make students well versed in the prerequisites for further studies in mathematics and engineering.

Syllabus

Sr.No	Contents	L	M
	Section- I		
1	Binomial Theorem: 1.1 Concepts of Permutations and Combinations and problems based on $^nP_r, ^nC_r$ 1.2 Binomial Theorem with positive integral index, general term, Binomial expansion for negative integral and fractional index. .	08	10
2	. Determinants: 2.1 Determinant of order three. 2.2 Cramer's rule. 2.3 Properties of determinants	06	12
3	Straight lines : 3.1 Equations of straight lines in different forms. 3.2 Angle between two straight lines, conditions for two parallel and perpendicular straight lines.	05	08

4	Complex Numbers :
	  4.1 Definition of complex number, Elementary
	       operations.
	  4.2 Argand's Diagram, Modulus, Amplitude, Polar
	       form of a complex number.
		05	10

	Section-II		

5	Trigonometry :
	5.1 Circular measure of an angle, Conversion from
	      degrees to radians and radians to degrees.
	5.2 Trigonometric ratios of angle in four quadrants.
	5.3 Compound angle formulae.
	5.4 Allied angle formulae.
	5.5 Product formulae, Sum or difference formulae.
	5.6 Multiple, submultiples angle formulae.
	5.7 Inverse trigonometric functions.
	5.8 Properties of triangle: sine rule, cosine rule.
	      (without proof)
		16	28

6	Matrices:
	6.1 Matrices of order m x n, types of matrices,
	      equality of matrices,
	6.2 Addition and subtraction of matrices, multiplication
	      of matrices.
	6.3 Transpose of matrix, adjoint of matrix, inverse of
	      matrix,
	6.4 Solution of simultaneous linear equations by adjoint
	      method.
		08	12

	Total	**48**	**80**

REFERENCE BOOKS:

1) Basic Mathematics -   B.M.Patel, J.M.Rawal and others -   Nirali
   Prakashan.
2) Mathematics for Polytechnic - S. P. Deshpande- Pune Vidyarthi Griha
   Prakashan.

Course Name : **Diploma in Mechanical Engineering**
Course Code : **DME**
Semester : **First**
Subject Title : **Physics- I**
Subject Code : **134PH12**

Teaching & Examination Scheme

Teaching Scheme			Paper Hours	Examination Scheme													Total Marks
L	T	P		Theory		Test	Total		PR		Oral		TW				
				Max	Min		Max	Min	Max	Min	Max	Min	Max	Min			
2	-	2	3	80	32	20	100	40	25	10	-	-	25	10			150

Rationale:–

Various phenomena, principles, laws, rules discovered and invented by physics are used for industrial, engineering and technological applications. The overall growth of various engineering disciplines, namely, mechanical, electrical, electronics, civil and environmental and so on depends upon the development of physics and its detail understanding.

For sustainable socio-economic development of country research techniques in engineering are required. While identifying and solving any field problem, scientific facts and results should be considered; and in this process physics plays a pivotal role. Different branches and sub-branches of physics, viz, dynamics, optics, acoustics, material science, semiconductor physics, nuclear physics and so on provide fundamental facts, laws and logical sequencing to streamline engineering and technological problems.

Objectives:–

Students should be able to;
- identify different systems of units and convert units from one system to other as well as conversant with practical units.
- estimate and minimize the errors.
- select proper measuring instrument considering least count, range and precision required.
- select appropriate materials required for a specific purpose by studying properties of materials.
- solve problem on kinetics and kinematics.
- analyze rectilinear, circular and simple harmonic motion and use it for solving engineering problems.
- to understand the concepts of charge, current, resistance, capacitance, magnetism .
- identify, analyze, discriminate and interpret logical sequence of field problems with the study of physics.

Syllabus

No	Contents	L	M
	SECTION – I		
1	1.Measurements 1.1 Units Necessity of measurement, concept of unit of a physical quantity, requirements of standard unit, Various system of units (CGS, MKS, SI, FPS), conversions, practical units, fundamental and derived physical quantities and their units, dimensions and dimensional analysis 1.2 Errors Accuracy, precision of instruments, errors, types of errors, minimization of errors, significant figures, problems 1.3 Measuring instruments Vernier caliper, micrometer screw gauge, spherometer, thermometer, galvanometer, voltmeter, ammeter with least count and range, errors in them and correction to it.	06	16
2	2. Properties of matter 2.1 Elasticity Deformation, restoring force, stress, strain, Hooke's law, Moduli of elasticity (Young, bulk and rigidity), relation between them, problems, stress-strain diagram for some materials (steel, aluminium, cast iron, concrete), breaking stress, factor of safety. 2.2 Viscosity Newton's law of viscosity, coefficient of viscosity, unit, streamline and turbulent flow, critical velocity, Reynold's number, problems, Stokes' law, determination of viscosity, factors affecting viscosity. 2.3 Surface tension Cohesive and adhesive forces, angle of contact, surface tension, capillary action, problems, factors affecting surface tension.	10	24
	SECTION – II		
3	1. Optics 3.1 Wave theory of light Huygen's theory, wavefronts, wavenormals, laws of reflection and refraction, total internal reflection, dispersion, angle of deviation, problems	06	16

	3.2 Interference and diffraction Principle of superposition, constructive and destructive interference, conditions to obtain steady interference pattern, Young's double slit experiment, diffraction, single slit and many slits diffraction, grating, applications, problems. 3.3 Polarization Polarized and unpolarized light, qualitative treatment of polarizer and analyzer, polarimeter, applications		
4.	4. Electricity and Electromagnetism 4.1 Coulomb's Law, Electric Field, Intensity of Electric field and Electric Potential, Capacitance, capacitors in series and parallel . Ohm's law, resistance, conductance, resistivity, conductivity, series and parallel combination of resistors, problems, Wheatstone's bridge, meter bridge, potentiometer, comparison of emf of cells, internal resistance of cell, heating effect of electric current. 4.2 Oersted experiment, magnetic field, magnetic flux, magnetic flux density, Biot-Savart law, magnetic field near straight conductor and at the centre of current carrying coil, problems, force experienced by current carrying conductor, force between two current carrying conductors	10	24
	Total	**32**	**80**

List of Laboratory experiments

1. Use of vernier caliper and observations with traveling microscope
2. Use of micrometer screw gauge and observations with spectrometer
3. Determination of surface tension of liquid using capillary action
4. Determination of coefficient of viscosity using Stokes' method
5. To verify Ohm's law.
6. To find unknown resistance and series parallel combination of resistances using meter bridge.
7. To compare emfs of cells.
8. To determine internal resistance of cell using potentiometer.
9. To determine J by electrical method
10. To find refractive index of glass slab by Snell's Law

Learning Resources:-
Text Book: -
Engineering Physics by Gaur R. K. and Gupta S. L., Dhanpat Rai Publications, New Delhi, Eighth Edition, 2001., Physics Text Book of 11th & 12th std.(NCERT)

References:-
1. Fundamentals of Physics Extended, By Halliday D., Resnik R. and Walker, Wiley – India, New Delhi, Eighth Edition, 2008.
2. Physics for scientists and Engineers by Serway R. A. and Jewett, Jr. J. W., Thomson Learning (Indian reprint), New Delhi, Sixth Edition, 2007.

Course Name : **Diploma in Mechanical Engineering**
Course Code : **DME**
Semester : **First**
Subject Title : **Chemistry - I**
Subject Code : **134CH13**

Teaching & Examination Scheme

Teaching Scheme			Paper Hours	Examination Scheme											Total Marks
L	T	P		Theory		Test	Total		PR		OR		TW		
				Max	Min		Max	Min	Max	Min	Max	Min	Max	Min	
2	-	2	3	80	32	20	100	40	25	10	-	-	25	10	150

Rationale:–
Chemistry is a basic science subject which is essential to all engineering courses. It gives knowledge of engineering materials, their properties, related applications & selection of materials for engineering applications.
Due to technological progress there are hazardous effects on environment & human life. The core knowledge of environmental effects will bring awareness in students about the precautions & preventions to be taken to reduce the ill effects.
This subject will generate curiosity of carrying out further development in engineering fields.

Objectives:–
1. To understand mole concept and volumetric analysis.
2. To represent the formation of bonds in molecules.
3. To describe the mechanism of redox reactions.
4. To identify the properties of organic compounds related to engineering applications.

Syllabus

SECTION - I				
No.	**Chapter**	**Contents**	**No. of Hours**	**Marks**
1	**Atomic Structure and Chemical Bonding**	Definitions of Elements, atoms, Molecules, Fundamental particles of atom, their mass, charge, location, Definition of atomic number, atomic mass number, Isotopes and Isobars, Electronic configuration based on Hunds Rule, Aufbau's principle, Pauli's exclusion principle (till Atomic no. 30), Definitions: atomic weight, equivalent weights of an element, Molecular	05	14

		weight, Mole in terms of number, mass, volume, Definitions of equivalent weight and, Molecular weight of molecule, Determination of percentage composition of an element in a given molecule,		
2	**Solution**	Solution, Concentrations of solution: Grams per litre, Percentage by weight or volume, Normality, Morality, Molality. Volumetric analysis, Titrations, Acid base titration, Acidimetry, Akalimetry, Redox titration, Iodometric titrations, Complexometric titration, Precipitation titration.	05	14
3	**Organic Chemistry**	Introduction: Types of chemistry, Catenation property of Carbon element, Organic compounds, its properties and applications, Classification: by structure and functional group, Homologous series, Alkanes, alkenes and alkyenes: Definition, General formula, Names and structure of first five members, Isomerism, Properties and Uses.	04	12
SECTION - II				
4	**Electrochemistry**	Electrochemistry, Electrochemical reactions, Construction and working of electrochemical cell & electrolytic cell, Faradays I & II laws of electrolysis, Applications of electrolysis: electroplating & refining, Electrochemical cells and batteries, Construction, working and applications of dry cells, fuel cells	08	14
5	**Polymers**	Polymer, Monomer, Polymerisation, Addition and condensation polymerisation, Plastics: definition, types: thermosetting & thermo softening plastics, compounding of plastics, properties and applications of plastics, Rubber, structure of rubber, Natural rubber: preparation & properties, Vulcanization of rubber, properties of vulcanized rubber, synthetic rubber & its comparison with natural rubber. Properties and applications of rubbers.	06	14

6	**Environmental Chemistry**	Introduction, Definition pollution, types of pollution, Air & Water pollution their causes, Acid rain, Ozone layer formation and depletion, Green House effect, Global warming, E waste, Radioactive pollution	04	12
			32	**80**

Practical:

List of experiments:-
1. To study the use of indicators, for identification of acid, base and neutral solutions from the given set of solutions.
2. To standardize HCl solution using N/10 Na_2CO_3.
3. To standardize $KMnO_4$ solution using N/10 $C_2H_2O_4$ solution.
4. To determine strength of the mixture of H_2SO_4 + $C_2H_2O_4$ using NaOH and $KMnO_4$ solution.
5. To determine the amount of ferrous sulphate or ferrous ammonium sulphates in the given solution using $KMnO_4$ solution.
6. To standardize $K_2Cr_2O_7$ solution using N/10 $Na_2S_2O_3$ solution.
7. To determine the amount of ferrous sulphate or ferrous ammonium sulphates in the given solution using $K_2Cr_2O_7$ solution.
8. To determine the amount of copper sulphate in the given solution using $Na_2S_2O_3$ solution.
9. To standardize EDTA solution using N/10 $ZnSO_4$ solution.
10. To standardize $AgNO_3$ solution using NaCl solution.

<u>**Learning Resources:**</u>

Text Books
1. Essentials of Physical chemistry B. S. Bhal & G. D. Tuli, Edition: 18Th (2010) S Chand Group, New Delhi.
2.. Engineering Chemistry Jain & Jain Dhanpat Rai & Co. (Pvt.) Delhi – 110006 Ltd Edition: Fifteenth (2008)

Reference books

1. A Text Book of Chemistry Shashi Chawla Educational & Technical Publishers Dhanpat Rai & Co. (Pvt.) Ltd, Edition: Third (2005)

Course Name   **: Diploma in Mechanical Engineering**
Course Code   **: DME**
Semester   **: First**
Subject Title   **: Communication Skill - I**
Subject Code   **: 134HM14**

Teaching & Examination Scheme

Teaching Scheme			Paper Hours	Examination Scheme												Total Marks
				Theory		Test	Total		PR		OR		TW			
L	T	P		Max	Min		Max	Min	Max	Min	Max	Min	Max	Min		
3	2	-	3	80	32	20	100	40	-	-	-	-	25	10		125

Rationale:
Technicians in industry require in grammatically correct written and oral communication. In order to develop the abilities in students a text has been introduced. The tutorials have been incorporated to provide practice to the students to develop writing skills. Further exercises have been included for improving oral communication, apart from the basic grammar topics.

Objectives:
Developing the skills of comprehension of passages, building vocabulary and ability to express through oral and written communication, improving skills of composition, and help them formulate grammatically correct sentences.

LEARNING STRUCTURE
Application:
To enable students to comprehend the meaning of new words, use grammar to write correct answer to the questions and develop paragraphs

Procedure:
1. Technique of providing responses to short and long questions
2. Technique of application of grammar
3. Procedure for writing paragraphs
4. Technique of referring to dictionary and thesaurus

Principles:
1. Principles of formation of sentences
2. Principles of identification of various aspects of grammar
3. Principles to develop the theme of paragraph

Concepts:
   1. Concept of comprehending the text
   2. Concept of Time
   3. Concept of classifying types of paragraphs

Facts:
1. Content of the text
2. Part of speech: Tenses, Verbs etc.
3. Topic sentences

Syllabus

Section I		
Name of Topic	**Hours**	**Marks**
PART I: TEXT *Vocabulary-Understanding meaning of contextual words * Comprehension- Understanding the passage, discussing the theme and expressing it appropriately * Identifying parts of speech to improve day to day oral communication	**24**	**40**

Section II		
NAME OF TOPIC	Hours	MARKS
PART II: Application of Grammar * Verbs: Subject –verb- agreement * Using appropriate Tenses according to the suitability and time elements • Punctuation • Correction of commonly misspelled words • Identifying Common errors in English language	10	15
PART III: Paragraph Writing/ Short composition * How to write a paragraph /short composition (Exercises given in assignment 4)	08	15
PART IV: Vocabulary Building * Word Formation *Technical vocabulary (usage of appropriate technical words in a passage) * use of synonyms/ antonyms/ homonyms /homophones * One word substitute	06	10
Total	**48**	**80**

Skills to be developed:
Intellectual Skills:
1. Skills of Speaking in correct English
2. Exploring details and its application.
3. Reporting Skills and expressing effectively

Motor Skills:
1. Use of appropriate body language
2. Diction and Enunciation

Listening Skills:
1. Skills of listening and Comprehension

List of Assignments:
1. Building Vocabulary – (12 hrs – 2 assignments)
   i) 25 words for each assignment.
   ii) Technical vocabulary- (2 hrs-1 assignment)

2. Grammar – (8 hrs – 2 assignments)
   i) Insert correct parts of speech in the sentences .
      (16 sentences – two each, from different part of speech)
   ii) Punctuate the sentences .(10 sentences)
   iii) Usage of appropriate spellings
  iv) Correction of tenses in the passages written by students.

3. Errors in English – (4 hrs- 2 assignments)
   i) Find out the errors and rewrite the sentences given by the teacher. (20 sentences)

4. Write paragraphs/ short composition on given topics (4 hrs)
   i) Engineers – Nation Builders
   ii) An unforgettable incident
   iii) Narrate your long term goal in life.
   iv) Biography of a person who inspired you.

Learning Resources:
Text Book: Communication Skills I-
Compiled by Mrs. Thomas & Mrs. Krishnamurthy, H&M Dept

Reference Books:
1. Contemporary English grammar, structure and composition, Green David, Macmillan, India, First edition, 2000.
2. English grammar and composition, R. C. Jain, Macmillan, India, First edition, 2005.
3. Thesaurus, Rodgers, Oriental Longman
4. Dictionary, Oxford, Oxford University
5. Dictionary, Longman, Oriental Longman
6. English for Practical purposes, Patil Z. N. et al, Macmillan, India, 2004

Course Name   **: Diploma in Mechanical Engineering**
Course Code   **: DME**
Semester   **: First**
Subject Title   **: Basic Workshop Practice - I**
Subject Code   **: 134ME15**

Teaching & Examination Scheme

Teaching Scheme			Paper Hours	Examination Scheme												Total Marks
				Theory		Test	Total		PR		OR		TW			
L	T	P		Max	Min		Max	Min	Max	Min	Max	Min	Max	Min		
1	-	3	-	-	-	-	-	-	-	-	-	-	50	20	50

Rationale:

Mechanical / Electrical / Electronics / Civil / Textile   Manufacturing / Technical Chemistry Engineering Diploma student is expected to know basic workshop practice like Wood working and hot working processes. The students are required to identify, operate and control various machines. The students are required to select and use various tools and equipments related to Wood working and smithy processes.

Objectives:

The student will able to
- Know basic workshop processes.
- Read and interpret job drawing.
- Identify, select and use various marking, measuring, holding, striking and cutting tools & equipments.
- Operate, control different machines and equipments.
- Inspect the job for specified dimensions.
- Produce jobs as per specified dimensions.
- Adopt safety practices while working on various machines.

Syllabus

Sr.No.	Details of Theory Contents	Periods

01	**ENGINEERING MATERIALS:**
	    Introduction.
	    Different types of ferrous and non-ferrous materials.
	    Properties of Engineering materials.
	LATHE Machine:
	    Introduction.
	    Various operations performed on Lathe machine.
	    Main parts of Lathe machine
		5

02	**CARPENTRY SHOP:**
	     Introduction.
	     Various types of woods.
	     Different types of tools, machines and accessories.
		2

03	**FITTING SHOP:**
	     Introduction
	     Various marking, measuring, cutting, holding and striking tools.
	     Different fitting operation like chipping, filing, right angle, marking, drilling, tapping etc.
	     Working Principle of Drilling machine, Tapping dies, its use.
	     Safety precautions and safety equipments.
		3

04	**WELDING SHOP:**
	     Introduction.
	     Types of welding, ARC welding, Gas welding, Gas Cutting.
	     Welding of dissimilar materials, Selection of welding rod material, Size of welding rod and work piece
		3

05	**SMITHY SHOP:**
	     Introduction.
	     Different forging processes like shaping, caulking, fullering, setting down operations etc.
	     Safety precautions and safety equipments.
		3

Sr.No.	Details Of Practical Contents

01	**CARPENTRY SHOP:**
	  Demonstration of different wood working tools / machines
	  One simple job involving any one joint like mortise and tenon, dovetail, bridle, half lap etc.

02	**WELDING SHOP:**
	     Demonstration of different welding tools / machines.
	     Demonstration of Arc Welding, Gas Welding, Gas Cutting and rebuilding of broken parts with welding.
	     One simple job involving butt and lap joint

03	**SMITHY SHOP:**
	     Demonstration of different forging tools and Power Hammer.
	     Demonstration of different forging processes like shaping, caulking, fullering, setting down operation etc.
	     One job like hook peg, flat chisel or any hardware item.

04	**FITTING SHOP:**
	     Demonstration of different fitting tools and drilling machines and power tools.
	     Demonstration of different operations like chipping, filing, drilling, tapping, cutting etc.
	     One simple fitting job involving practice of chipping, filing, drilling, tapping, cutting etc.

Text Books:
1. Mechanical Workshop Practice-K.C.John-PHI Learning Pvt Ltd. EEE 2010

Reference Books:
1. B.S. Raghuwanshi- Workshop Technology – Dhanpat Rai and sons, New Delhi, Ninth Edition 2002
2. S.K. Hajra Chaudhary- Workshop Technology Vol I & II – Media Promotors and Publisher, New Delhi. Eighth Edition 1986

Course Name   **: Diploma in Mechanical Engineering**
Course Code   **: DME**
Semester   **: First**
Subject Title   **: Engineering Graphics- I**
Subject Code   **: 134ME16**

Teaching & Examination Scheme

Teaching Scheme			Paper Hours	Examination Scheme												Total Marks
				Theory		Test	Total		PR		OR		TW			
L	T	P		Max	Min		Max	Min	Max	Min	Max	Min	Max	Min		
2	-	4	-	-	-	-	-	-	50	20	-	-	50	20		100

Rationale:–
       This subject aims at making the students understand the fundamentals of Engineering Graphics which is a language used by Engineers for developing & expressing ideas & conveying the instructions which will be used to carry out jobs in the field of engineering.

       At the first semester level the subject deals with drawing instruments & it's use, geometrical constructions, engineering curves, & orthographic projections. An introduction to computer drafting will be helpful in understanding the application of the subject in the industry. This subject will play very important role in designing, operation and maintenance areas of the existing and changing technological requirements of the modern world.

       This course aims at building the foundation for further courses in drawing and other allied subjects.

Objectives:
The student will able to
- Understand the fundamentals of Engineering Graphics
- Read and interpret object drawings.

Syllabus

No	Topic		Contents	Hrs
1	Drawing Instruments & their uses	1.1	Letters & Numbers (Single stroke Vertical)	4
		1.2	Convention of Lines & it's applications	
		1.3	Geometrical Constructions involving construction of tangential arcs	

2	Engineering Curves	2.1	Ellipse by following Methods
			   1. Arcs of Circles Method
			   2. Concentric Circles method
			   3. Rectangle/Oblong Method
			   4. Eccentricity Method
				6

		2.3	Parabola by following Methods
			    1. Eccentricity Method
			    2. Rectangle Method	

		2.4	Hyperbola by Eccentricity Method Rectangular Hyperbola	
		2.5	Cycloid (Starting Point of the curve to be the point of contact at the beginning)	
		2.6	Involute of a circle (Full Involute only) Involute of a regular polygon	
		2.8	Helix on a cylinder	
3	Projections of points & straight Lines		Reference Planes of projections – HP, VP & PP Orthographic projections of points, Projections of Straight Lines with lines inclined to both the reference planes.(Lines to be considered in first quadrant only. Simple problems excluding HT & VT of a line)	6
4	Projections of Planes		Projections of circular, square, rhombus, triangular, regular pentagonal & hexagonal plane surfaces with surfaces inclined to one reference plane & perpendicular to other. (excluding side view)	4
5	Orthographic Projections		Simple Orthographic and Sectional Orthographic Projections of simple machine parts .(Full Section in one view)	10
6	Introduction to Computer Drafting		Introduction to different commands in the drawing software	2

Practicals

    A. The students should workout the problems on the following topics preferably on quarter imperial drawing sheets during the practicals.
        1. Three sheets on problems from geometrical constructions, lettering & types of lines
        2. Five Sheets on the topic of Engineering Curves.
        3. Four Sheets on Projections of Points & Projections of Straight Lines.
        4. Three Sheets on Projections of Planes.
        5. Five Sheets on the topic of Orthographic Projections.
    B. Demonstration of drafting software to the students.

Text Books:-

1. Engineering Drawing : N.D.Bhat , Charotar Publishers,49th Edition 2010
2. Engineering Graphics & Engineering – S.T.Ghan, M.V.Rawalani- Nirali Publications-seventh Edition -2009

References:-

1. Engineering Drawing- D.A.Jolhe - TATA McGraw Hill- 2008
2. Engineering Graphics- K.R.Mohan – Dhanpatrai publishing co.-I[st] edition-2009

Course Name   : **Diploma in Mechanical Engineering**
Course Code   : **DME**
Semester   : **First**
Subject Title   : **Computer Applications**
Subject Code   : **134ME17**

Teaching & Examination Scheme

Teaching Scheme			Paper Hours	Examination Scheme													Total Marks
				Theory		Test	Total		PR		OR		TW				
L	T	P		Max	Min		Max	Min	Max	Min	Max	Min	Max	Min			
1	-	2	-	-	-	-	-	-	25	10	-	-	25	10			50

Rationale: Computer plays very important role in human lives. Computers are now affecting every sphere of human activity and bringing about many changes in industry, government, education, medicine, scientific research, law, social sciences and even in arts like music and painting. Student will get the basic concept of C programming.

Objective: At the end of this course students will be able to
Students will be able to:
1. Understand the Components of computer system.
2. Understand the operating system (windows XP).
3. Understand File Storage.
4. Use of Microsoft office.
5. Use of basic C programming.

Syllabus

Sr. No.	Theory Contents	Hours
01	**Introduction to Computer** Introduction, Types of Computer, The System Unit, Memory of computer. Components of PC - Monitor, Mouse, Keyboard, Disk, Printer, Modem, Storage Devices. Advantages and Applications of computer in Engineering and Technology	03
02	**Introduction to Operating System** Working with windows Desktop, icons, Taskbar, menu bar option, My Documents, my Computer, Control Panel, Recycle bin, Concept of drives, folders, files Windows Accessories – Notepad, WordPad, paint, clock, calendar, calculator	05

Sr. No.		
03	**GUI Based Software – MS – Office 2010** MS-WORD: opening menus, toolbars, opening and closing documents, clipboard concept MS- Excel: working and manipulating data with excel, formula functions, chart and its types MS-Power point: Working with PowerPoint and presentation layout, graphs, auto content wizard, slide show, animation effect, normal, outline, slide sorter, reading view	06
04	**Internet** History of Internet, Advantages and limitations of Internet, equipment required for Internet connection, Internet Browser	02
	Total	**16**

List of Practical:

Sr. No.	Practical
1	Demonstration of input and output peripheral devices to students
2	Moving from one window to another window Opening task bar buttons into a window. Arranging icons on the desktop and create shortcuts
3	Creating folders and files. Copy, rename, delete files and folders. Moving folders and files from one drive to another drive
4	Create and edit notepad document. Create and edit WordPad document. Create paint file by using different drawing tools
5	Creating, editing, saving word document. Entering and formatting text. Paragraph formatting, use bullets and numbering. Page formatting – page margins, page size, orientation, page break, headers and footers. Create tables, insert, and delete rows and columns. Printer installation and printing document. Create and print mail merging address for envelop and letters.
6	Create, open and print worksheet with page setup and print options. Enter data and format cells. Select, insert, delete cells, rows and columns. Insert formulas, functions and named ranges in worksheet. Create chart of different types

7	Create a simple text slide using formatting, Selecting a slide layout. And insert pictures & backgrounds. Insert auto shapes, clip-arts and form group/un group objects from slides. Apply slide transitions and slide timings and animation effect for slide show
8	Perform Internet connection. Create own e-mail id, send and receive mail with attachment. Searching information using searchengine (Google, MSN, bing etc.) Do Internet chatting and understand the chat toolbar. Organize favorite websites in different browsers

Term Work- Students should submit practical journal along with the print outs of assignments conducted during the practical.

Text Books:-

1) Introduction to computing systems, by Patt and Patel, Tata McGraw-Hill Publishing Company, Second Edition, 2007

Reference Books:-

1) Microsoft office 2010, by Steve Schwartz, Pearsonn
2) Introduction to computer, by Alexion Leon

Course Name   : **Diploma in Mechanical Engineering**
Course Code   : **DME**
Semester   : **First**
Subject Title   : **Student Centered Activity/Test**

Teaching Scheme			Paper Hours	Examination Scheme											Total Marks
				Theory		Test	Total		PR		OR		TW		
L	T	P		Max	Min		Max	Min	Max	Min	Max	Min	Max	Min	
-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-

Rationale:–

Most of the diploma holders join industries. Due to globalization and competition in the industrial and service sectors the selection for the job is based on campus interviews or competitive tests.

While selecting candidates a normal practice adopted is to see general confidence, ability to communicate and attitude, in addition to basic technological concepts.

The purpose of introducing professional practices is to provide opportunity to students to undergo activities which will enable them to develop confidence. Expert lectures, E-learning sources, E-library, Internet, seminars on technical topics and group discussion are planned in a semester so that there will be increased participation of students in learning process.

Objectives:

The Student will be able to:

1. Acquire information from different sources
2. Prepare notes for given topic
3. Present given topic in a seminar
4. Interact with peers to share thoughts
5. Take the advantages of E-learning sources